

IN THE CLAIMS:

Claim 1 (Currently Amended) A method for characterizing a frequency translation device, the method comprising:

supplying a stimulus condition as input to the frequency translation device to generate an output spectrum;

measuring a plurality of intermodulation products in the output spectrum of the frequency translation device resulting from the stimulus condition input, the plurality of intermodulation products further comprising a plurality of sum intermodulation products and a plurality of difference intermodulation products;

establishing a predetermined file format;

storing the plurality of sum intermodulation products and the plurality of difference intermodulation products in a plurality of output files according to the predetermined file format; and

establishing an index file to identify the stored output files, wherein the index file comprises at least one variable associated with the stimulus condition that identifies the stored output files identified by associated with the stimulus condition.

Claim 2 (Original) The method of claim 1, wherein the frequency translation device is a mixer.

Claim 3 (Original) The method of claim 1, wherein supplying the stimulus condition further comprises supplying a sweeping stimulus condition.

Claim 4 (Original) The method of claim 3, wherein supplying the sweeping stimulus condition further comprises supplying an input signal at a predetermined power and frequency and establishing a local oscillator input at a predetermined power and frequency and stepping the input signal and local oscillator power through a predetermined range of values.

Claim 5 (Original) The method of claim 4, wherein supplying the sweeping stimulus condition further comprises supplying an input signal at a first frequency and a local oscillator input at a

second frequency, stepping the input signal power level through a predetermined first range of values, and stepping the local oscillator power level through a predetermined second range of values.

Claim 6 (Original) The method of claim 1, wherein measuring the plurality of intermodulation products further comprises measuring the amplitude of the intermodulation products.

Claim 7 (Original) The method of claim 1, wherein measuring the plurality of intermodulation products further comprises measuring the amplitude and phase of the intermodulation products.

Claim 8 (Original) The method of claim 1, wherein establishing a predetermined file format further comprises establishing a predetermined file format whereby the sum intermodulation products and the difference intermodulation products are stored within the same file.

Claim 9 (Original) The method of claim 1, wherein establishing a predetermined file format further comprises establishing a predetermined file format whereby the sum intermodulation products and the difference intermodulation products are stored within separate files.

Claim 10 (Original) The method of claim 1, further comprising assigning a variable to identify the intermodulation product stored as a sum intermodulation product or a difference intermodulation product.

Claim 11 (Original) The method of claim 10, further comprising storing the assigned variable with the intermodulation product.

Claim 12 (Original) The method of claim 1, wherein establishing an index file to identify the stored output files further comprises establishing the index file in accordance with a microwave data interface file format.

Claim 13 (Currently Amended) The method of claim 1, further comprising the step of simulating the response of the frequency translation device to a simulated stimulus condition.

Claim 14 (Currently Amended) The method of claim 13, wherein the step of simulating the response of the frequency translation device to a simulated stimulus condition further comprises:

~~establishing a simulated stimulus condition;~~

~~relating the simulated stimulus condition to the index file;~~

using the simulated stimulus condition as the at least one variable of the index file to identify the stored output files associated with the simulated stimulus condition;

extracting the intermodulation products ~~of interest~~ from the stored data output files that are associated with the simulated stimulus condition; and

simulating the response of the frequency translation device by displaying the extracted intermodulation products ~~a result of the simulation.~~

Claim 15 (Original) The method of claim 14, wherein the simulated stimulus condition further comprises a simulated sweeping stimulus condition.

Claim 16 (Currently Amended) The method of claim 14, wherein extracting the intermodulation products ~~of interest~~ from the stored data files further comprises utilizing interpolation to extract the intermodulation products ~~of interest~~ based on the simulated stimulus condition.

Claim 17 (Currently Amended) The method of claim 14, wherein displaying ~~a result of the simulation~~ the extracted intermodulation products further comprises displaying the extracted intermodulation products in a graphical format ~~result.~~

Claim 18 (Currently Amended) The method of claim 17, wherein the graphical format result is three-dimensional.

Claim 19 (Currently Amended) A method for characterizing and simulating a frequency translation device, the method comprising:

supplying a stimulus condition as input to the frequency translation device to generate an output spectrum;

measuring a plurality of intermodulation products in the output spectrum of the frequency translation device resulting from the stimulus condition input, the plurality of intermodulation

products further comprising a plurality of sum intermodulation products and a plurality of difference intermodulation products;

establishing a predetermined file format;

storing the plurality of sum intermodulation products and the plurality of difference intermodulation products in a plurality of output files according to the predetermined file format;

establishing an index file to identify the stored output files, wherein the index file comprises at least one variable associated with the stimulus condition that identifies the stored output files ~~identified by~~ associated with the stimulus condition;

establishing a simulated stimulus condition;

~~relating the simulated stimulus condition to the index file;~~

using the simulated stimulus condition as the at least one variable of the index file to identify the stored output files associated with the simulated stimulus condition;

extracting the intermodulation products ~~of interest~~ from the stored ~~data~~ output files that are associated with the simulated stimulus condition; and

simulating the response of the frequency translation device by displaying the extracted intermodulation products ~~a result of the simulation.~~

Claim 20 (Currently Amended) A system for characterizing a frequency translation device, the system comprising:

a stimulus supply to supply a stimulus condition input to the frequency translation device to generate an output spectrum;

an output measurement device to measure a plurality of intermodulation products in the output spectrum of the frequency translation device resulting from the stimulus condition input, the plurality of intermodulation products further comprising a plurality of sum intermodulation products and a plurality of difference intermodulation products;

a predetermined file format to store the plurality of sum intermodulation products and the plurality of difference intermodulation products in a plurality of output files according to the predetermined file format; and

an index file to identify the stored output files, the stored output files identified by as least one variable of the index file associated with the supplied stimulus condition.

Claim 21 (Original) The system of claim 20, wherein the frequency translation device is a mixer.

Claim 22 (Original) The system of claim 20, wherein the stimulus condition input is a sweeping stimulus condition input.

Claim 23 (Original) The system of claim 20, wherein the stimulus supply further comprises a plurality of signal generators.

Claim 24 (Original) The system of claim 20, wherein the output measurement device is a spectrum analyzer.

Claim 25 (Original) The system of claim 20, wherein the intermodulation products measured are amplitude values.

Claim 26 (Original) The system of claim 20, wherein the intermodulation products measured are complex values representing amplitude and phase components.

Claim 27 (Original) The system of claim 20, the predetermined file format further comprises a storage format whereby the sum intermodulation products and the difference intermodulation products are stored within the same file.

Claim 28 (Original) The system of claim 20, wherein the predetermined file format further comprises a storage format whereby the sum intermodulation products and the difference intermodulation products are stored within separate files.

Claim 29 (Original) The system of claim 20, further comprising a variable assigned to identify the intermodulation product stored as a sum intermodulation product or a difference intermodulation product.

Claim 30 (Original) The system of claim 29, wherein the assigned variable is stored with the intermodulation product.

Claim 31 (Original) The system of claim 20, wherein the index file is in accordance with a microwave data interface file format.

Claim 32 (Original) The system of claim 20, further comprising a simulation device to simulate the response of the frequency translation device to a simulated stimulus condition.

Claim 33 (Currently Amended) The system of claim 32, wherein the simulation device further comprises:

a simulated stimulus condition selector to select a stimulus condition, the selected stimulus condition identifying the index file, the index file identifying and extracting the intermodulation products ~~of interest~~ from the stored data output files associated with the simulated stimulus condition; and

a display to display the simulated response of the frequency translation device by displaying the extracted intermodulation products ~~a result of the simulation~~.

Claim 34 (Original) The system of claim 32, wherein the simulated stimulus condition further comprises a simulated sweeping stimulus condition.

Claim 35 (Currently Amended) The system of claim 33, wherein the ~~result~~ simulated response is displayed graphically.

Claim 36 (Currently Amended) The system of claim 35, wherein the ~~graphical result~~ simulated response is displayed graphically in three-dimensions.

Claim 37 (Currently Amended) A system for characterizing and simulating a frequency translation device, comprising:

a stimulus supply to supply a stimulus condition input to the frequency translation device to generate an output spectrum;



an output measurement device to measure a plurality of intermodulation products in the output spectrum of the frequency translation device resulting from the stimulus condition input, the plurality of intermodulation products further comprising a plurality of sum intermodulation products and a plurality of difference intermodulation products;

a predetermined file format to store the plurality of sum intermodulation products and the plurality of difference intermodulation products in a plurality of output files according to the predetermined file format;

an index file to identify the stored output files, the stored output files identified by as least one variable of the index file associated with the supplied stimulus condition.

a simulated stimulus condition selector to select a stimulus condition, the selected stimulus condition identifying the index file, the index file identifying and extracting the intermodulation products ~~of interest~~ from the stored ~~data~~ output files associated with the simulated stimulus condition; and

a display to display the simulated response of the frequency translation device by displaying the extracted intermodulation products ~~a result of the simulation~~.